and along the Pacific coast. The excess was large, usually 4° to 6° per day, from the southern lake region southward, to the Gulf and southwestward to the Rio Grande, also in the southern Appalachian districts.

In Oklahoma the month was the warmest October of the nearly 40 for which means from well-distributed stations have been computed, and from Mississippi to New Mexico it was among the warmest Octobers.

The highest temperatures usually occurred about the 9th to 14th from the Dakotas and Nebraska eastward to the Middle and North Atlantic States, the marks reached on the 10th to 12th from the middle Missouri Valley to the lower Lake region being at many points the highest October temperatures of record. In the western Cotton States the 1st was usually the warmest day and in the eastern either the 6th or the 7th. The highest marks in the far West were noted about the 6th to 8th. The highest temperature recorded was 110° in interior southern California, on the 7th.

The lowest temperatures occurred usually during the final week, save just before the middle of the month in California and many Plateau and Rocky Mountain States and during the first half of the final decade in the majority of the Plains and Gulf States. The lowest temperature reported was 3° below zero, in central Montana, on the 29th. Temperatures below freezing were recorded in some portions of all States save a few Southeastern and Middle Gulf States.

PRECIPITATION

Save in a portion of the extreme Northwest and from Oklahoma and Arkansas northeastward to the southern part of the Lake region, the early and late portions of the month brought little rain, yet the time distribution of the rain, coming mainly about the middle of the month, was not unfavorable, on the whole. The geographic distribution was notably favorable. The Atlantic States, where September had been so wet, received less rain than normal; from Virginia to southern New England the shortage was especially marked. Louisiana and Texas, which had excesses during September, had moderate deficiencies in October.

From California and Oregon northeastward to Montana and North Dakota a shortage of precipitation in October followed a deficiency in September. In California the October precipitation averaged less than one-third of the normal.

Between the Appalachians and the Rockies, also in the southern plateau, there was more than normal precipitation nearly everywhere, save near the Gulf and along the Canadian boundary. The excess was considerable from Wisconsin, Iowa, and Nebraska southeastward to Tennessee and Arkansas, save that the Ozark region in Missouri had a deficiency.

SNOWFALL

The October snowfall covered less of the country than usual and especially it was scanty as a rule, in the more northern States from Minnesota and Iowa eastward.

About the 10th to 13th considerable snow fell from southwestern and south-central Montana and southeastern Idaho south eastward over Wyoming and parts of the States adjoining. At Lander, Wyo., the fall at this time was 22 inches and the ground remainded covered for more than 10 days. At the very end of the month a noteworthy fall of snow occurred in Nebraska and southern South Dakota, with most of Wyoming and parts of Colorado and Kansas.

The elevated portions of the middle Mountain and Plateau States seem to have had somewhat more snow than the average October amounts indicated by past seasons.

RELATIVE HUMIDITY

The percentage of relative humidity was usually above normal in the central and southeastern portions, particularly in the lower Ohio Valley and most parts of the Carolinas. In the Northeast, in western Texas and southern New Mexico, in most parts of the plains, and especially in the northernmost districts from western Minnesota to the Cascade Mountains the humidity was less than normal. In Colorado and thence southwestward to the southern California coast and likewise on the immediate north Pacific coast the relative humidity averaged somewhat greater than normal.

SEVERE LOCAL STORMS OCTOBER, 1928

[The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A more complete statement will appear in the annual report of the chief of bureau]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Pawnee County, Okla.	4	4 p. m.	1,760		$60,000	Heavy hail	Poultry killed; crops ruined; roofs, automobiles, windows, and other property damaged; path 25 miles long.	Official, U. S. Weather Bureau.
Coffey County, Kans.	4	4–5 p. m.	[1] 5		6,000	do	Chief damage at Le Roy where much damage to property resulted. Path 20 miles.	Do.
Mahaska County, Iowa	4	6:15 p. m.				Tornado	Damage to small buildings and trees reported	Do.
Keokuk County, Iowa	4	6:30 p. m.				do	Considerable damage to small buildings	Do.
Poweshiek County, Iowa	4	do				do	do	Do.
Iowa County, Iowa	4	7:10 p. m.			2,000	Wind	Character of damage not reported	Do.
Cedar County, Iowa	4	8 p. m.	440		4,000	Tornado	Character of damage not reported. Path 1 mile	Do.
Marion County, Iowa	4	do			5,000	Wind	Character of damage not reported	Do.
Carlinville, Ill. (near)	4	8:30 p. m.	100–200		7,000	Tornado	Outbuildings blown down; roofs torn off; orchard trees uprooted; 1 person injured; path 5 miles.	Do.
Taylorville, Ill. (7 miles east of).	4	9:30 p. m.	440			do	A few small farm buildings damaged or wrecked; grove badly damaged; path 1 mile.	Do.
Oconto County (central) to Marinette County (northeastern), Wis.	4	10:30 p. m.	60–880		24,000	Severe squalls	Damage chiefly to farm property other than crops.	Do.
Clinton County, Iowa	4				3,000	Wind	Small buildings and trees damaged	Do.
Morrison, Ill.	4				3,000	Severe electrical	Light service impaired, farmhouse and shed burned.	Do.
Tallula, Ill. (near)	4				3,400	do	2 barns struck, 1 a total loss; other minor damage.	Do.
Antelope County, Nebr. (southeastern).	10	4 p. m.				Hail and wind	Some crops injured; roofs damaged; windows broken.	Do.
Petersburg, Nebr.	11	3:30 p. m.	3,520			Hail	Corn flattened; poultry killed; windows borken; path 15 miles.	Do.
Finney, Scott, and Lane Counties, Kans.	11	P. m.	10		20,000	Tornado	Many farm buildings destroyed	Do.
Posey County (eastern) to Vanderburg County (western), Ind.	16	1 p. m.	20			do	Many houses unroofed, some wrecked; scores of outbuildings demolished; trees and poles blown down; stock killed; path 12 miles.	Do.
Monmouth, Ill. (near)	17					Severe whirling dust storm.	Several small buildings moved from foundations; path several miles.	Do.

[1] Miles.